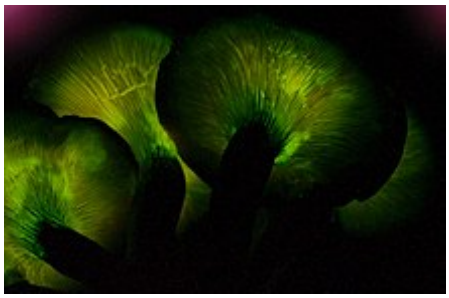
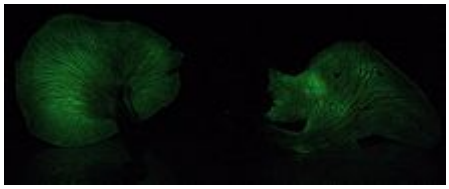
Foxfire

Foxfire, also called **fairy fire** or **chimpanzee fire**,[1] is the bioluminescence created by some species of fungi present in decaying wood. The bluish-green glow is attributed to a luciferase, an oxidative enzyme, which emits light as it reacts with a luciferin. The phenomenon has been known since ancient times, with its source determined in 1823.

Panelluses stipticus, Mt. Vernon, Wisconsin (long exposure)



Omphalotus olearius



Omphalotus nidiformis, glowing in the dark

Artificial fill light contrasts against the natural glow.

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Description

Foxfire is the bioluminescence created by some species of fungi present in decaying wood. It occurs in a number of species, including *Panellus stipticus*, *Omphalotus olearius* and *Omphalotus nidiformis*. The bluish-green glow is attributed to luciferin, which emits light after oxidation catalyzed by the enzyme luciferase. Some believe that the light attracts insects to spread spores, or acts as a warning to hungry animals, like the bright colors exhibited by some poisonous or unpalatable animal species.[2] Although generally very dim, in some cases foxfire is bright enough to read by.[3]

History

The oldest recorded documentation of foxfire is from 382 B.C., by Aristotle,[4] whose notes refer to a light that, unlike fire, was cold to the touch. The Roman thinker Pliny the Elder also mentioned glowing wood in olive groves.[5]

Foxfire was used to illuminate the needles on the barometer and the compass of *Turtle*, an early submarine.[6] This is commonly thought to have been suggested by Benjamin Franklin; a reading of the correspondence from Benjamin Gale, however, shows that Benjamin Franklin was only consulted for alternative forms of lighting when the cold temperatures rendered the foxfire inactive.

After many more literary references to foxfire by early scientists and naturalists, its cause was discovered in 1823. The glow emitted from wooden support beams in mines was examined, and it was found that the luminescence came from fungal growth.[7]

The "fox" in *foxfire* may derive from the Old French word *faux*, meaning "false", rather than from the name of the animal.[8] The association of foxes with such fires is widespread, however, and occurs also in Japanese folklore.

See also

- List of bioluminescent fungi
- Will-o'-the-wisp
- Aurora Borealis, called "revontulet" (literally "foxfires") in the Finnish language

References

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4. Lee, J (2008). "Bioluminescence: the First 3000 Years (Review)". *Journal of Siberian Federal University. Biology*: 194–205.
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7. "Bioluminescent foxfire, Bioluminescence facts, Bioluminescent fungi" (http://www.journeyidea.com/firefox-that-glows). Journey Idea. Retrieved July 18, 2011.
8. Smythe Palmer, Abram, *The Folk and Their Word-lore: An Essay on Popular Etymologies* (1904)

External links

- Foxfire: Bioluminescence in the Forest (https://web.archive.org/web/20110719224836/http://warnell.forestry.uga.edu/service/library/index.php3?docID=173) pdf file (https://web.archive.org/web/20130507020951/http://warnell.forestry.uga.edu/service/library/for99-021/for99-021.pdf) by Dr. Kim D. Coder, University of Georgia 8/99
- Bioluminescent Fungi (http://www.mykoweb.com/articles/BioluminescentFungi.html) at Mykoweb

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